

What is claimed is:

1 1. A multiple semiconductor chip (multi-chip) module for use in
2 high-power applications, comprising at least a power semiconductor
3 chip and a control semiconductor chip mounted on an electrically
4 conductive heat sink, wherein said power semiconductor chip
5 comprises a Silicon-On-Insulator (SOI) device and said control
6 semiconductor chip comprises a semiconductor device having a
7 substrate connected to ground potential, and said power
8 semiconductor chip and said control semiconductor chip are directly
9 mounted on said electrically conductive heat sink without the use
10 of a separate electrical insulation layer.

1 2. A multi-chip module as in claim 1, wherein said control
2 semiconductor chip semiconductor device comprises a BIMOS device.

1 3. A multi-chip module as in claim 1, wherein said control
2 semiconductor chip semiconductor device comprises a CMOS device.

1 4. A multi-chip module as in claim 1, wherein said control
2 semiconductor chip semiconductor device comprises a bipolar device.

1 5. A multi-chip module as in claim 1, wherein said conductive
2 heat sink is connected to ground potential.

1 6. A multi-chip module as in claim 1, wherein said conductive
2 heat sink comprises a metal.

1 7. A multi-chip module as in claim 6, wherein said metal comprises
2 copper.

1 8. A multiple semiconductor chip (multi-chip) module for use in
2 high-power applications, comprising a plurality of semiconductor
3 chips all directly mounted on an electrically conductive heat sink
4 without the use of a separate electrical insulation layer.